

| | | |
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| APPROVED | O.G. FIG. | |
| | BY | CLASS |
| | SUBCLASS | |
| DRAFTSMAN | | |

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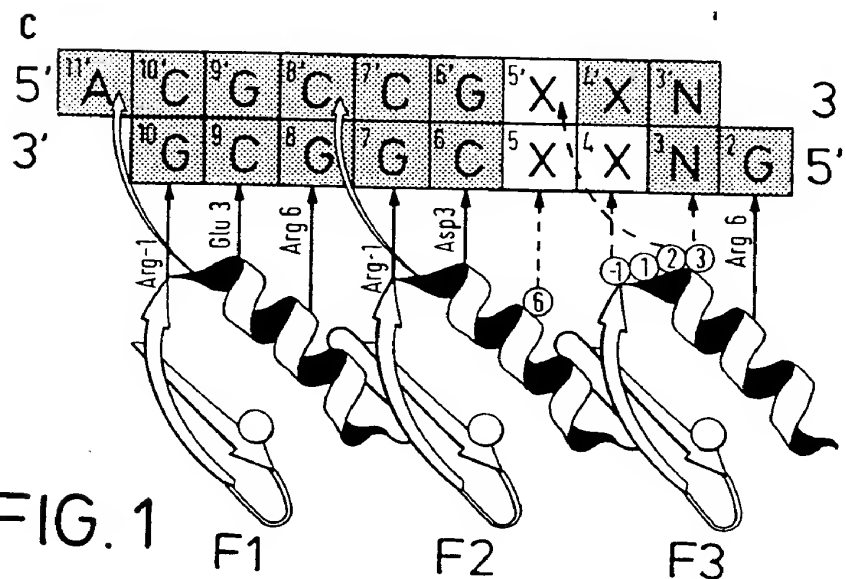
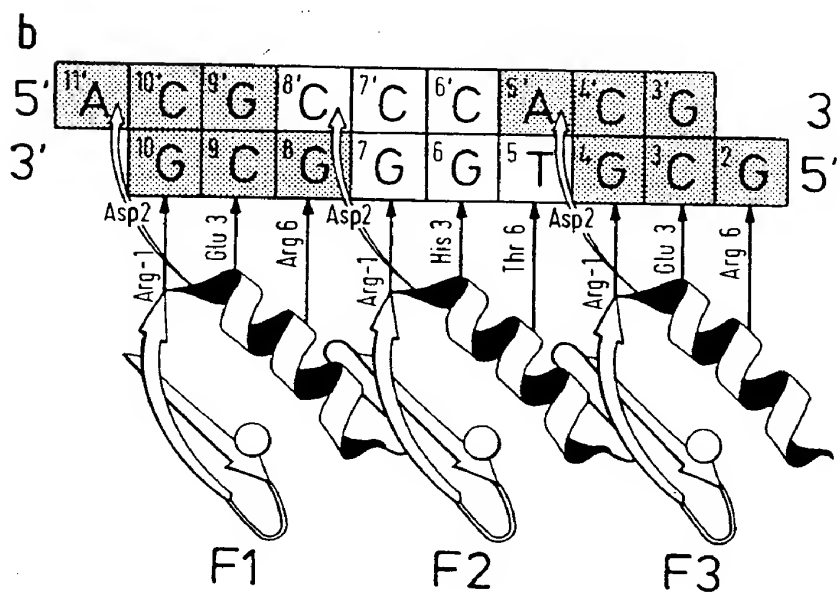
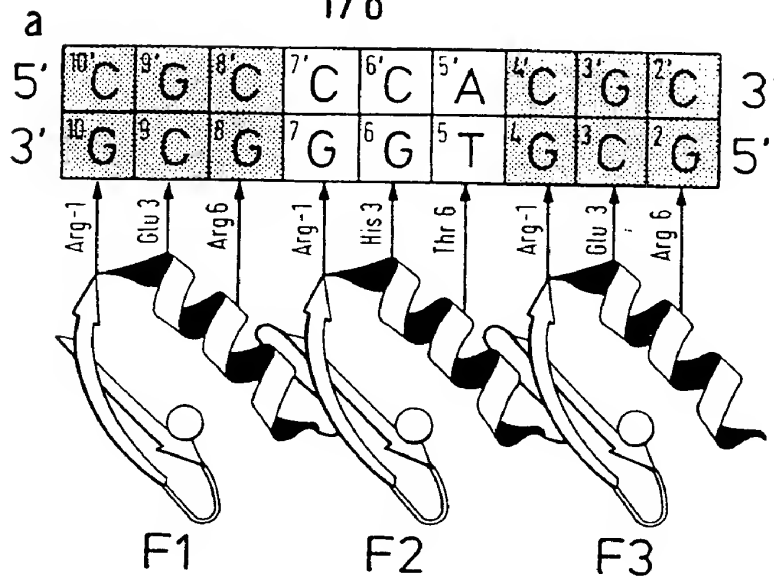


FIG. 1

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| | | |
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| APPROVED | O.G. FIG. | |
| BY | CLASS | SUBCLASS |
| DRAFTSMAN | | |

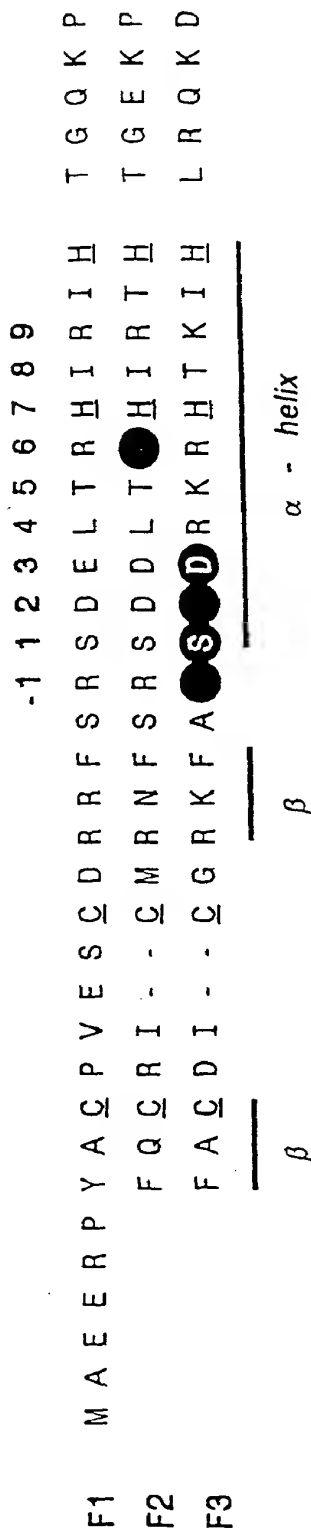


FIG. 2

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| APPROVED | CLASS | SUBCLASS |
| | DRAFTSMAN | |

| BASE AT POSITIONS 4'X AND 5'X OF DNA SITES USED IN SELECTIONS | AMINO ACIDS SELECTED IN FINGERS 2 AND 3 | | BINDING SITE SIGNATURE | | No. OF CLONES SELECTED AND SCREENED | BASES AT POSITIONS 4'X AND 5'X OF DNA SITES USED IN SELECTIONS | AMINO ACIDS SELECTED IN FINGERS 2 AND 3 | | BINDING SITE SIGNATURE | | No. OF CLONES SELECTED AND SCREENED | | | | |
|---------------------------------------------------------------|-----------------------------------------|-------|------------------------|---------|-------------------------------------|----------------------------------------------------------------|-----------------------------------------|-------|------------------------|---------|-------------------------------------|---|---|---|---|
| | F2 | F3 | 4'X | 5'X | | | F2 | F3 | 4'X | 5'X | | | | | |
| GG | 6 | -1123 | G A T C | G A T C | 4 | CC | 6 | -1123 | G A T C | G A T C | 1 | | | | |
| | R | RLEY | | | | | T | DPHN | | | | 4 | | | |
| | * R | RSED | | | | | E | HSKS | | | | | 1 | | |
| | R | RHTH | | | | | E | HRQN | | | | | | 1 | |
| | R | RSSE | | | | | S | DRAN | | | | | | | 2 |
| R | RSSA | | | | T | DRAN | | | | | | | | | |
| AG | R | QVTT | A | G | 4 | AC | * Y | RSQD | A | A | 3 | | | | |
| | * R | QSGD | | | | | V | QVGH | | | | 2 | | | |
| | R | QLAT | | | | | T | QLAT | | | | | 3 | | |
| | R | QDAH | | | | | TA | N | TSQA | T | | | | A | 4 |
| | R | QRAS | | | | | | N | TSAS | | | | | | |
| K | QSTS | | | K | LAQT | | | | 1 | | | | | | |
| TG | R | SSGD | T | G | 1 | * E | | RSRD | | | | 3 | | | |
| | R | SASA | | | | | E | RLRD | | | 4 | | | | |
| | * R | NSGD | | | | | V | HLAT | | | | | 1 | | |
| | R | LVQN | | | | | V | HLTT | | | | | | 1 | |
| | K | TGAS | | | | | L | VGHH | | | | | | | 1 |
| R | TPSG | | | CA | Y | HPAT | C | A | 2 | | | | | | |
| R | TQTA | | | | N | HPAN | | | | 1 | | | | | |
| R | TSAA | | | | E | HHSN | | | | | 9 | | | | |
| CG | R | DTSV | C | | G | 3 | L | DSRA | | | | | | 2 | |
| | R | DAST | | | GT | | | * T | KSSD | G | T | 2 | | | |
| | R | DASA | | | | | | * K | SSSD | | | | 1 | | |
| | R | DTSS | | | | | | * K | RSHD | | | | | | 1 |
| | GC | A | RNHD | G | | | | C | 2 | A | RSSY | | | | |
| * N | | RSTD | | | T | RSSS | | | | | 1 | | | | |
| * S | | RSTD | | | AT | S | QIST | A | | | | T | 3 | | |
| S | | SRHS | | | | S | QIGA | | | | | | | 1 | |
| T | | RNST | | | | T | QYST | | | | | | | | 1 |
| T | RTST | | | T | | QSAS | | | 1 | | | | | | |
| T | TRYA | | | TT | T | QSQH | | | | 1 | | | | | |
| T | RAQN | | | | T | QTSH | | | 1 | | | | | | |
| AC | A | QAAT | A | | C | 4 | T | QPGH | | | | | 1 | | |
| | A | QGTN | | | | | | T | | | QDTH | | | | 1 |
| | * V | TSRD | | | K | | | QDST | | | 2 | | | | |
| | S | QRGA | | | CT | | | K | DHSS | C | | T | | 5 | |
| | S | QSTT | | | | | | T | HPST | | | | | | |
| A | TSSS | | | S | | DSSR | | | 1 | | | | | | |
| T | SSST | | | S | | DSSR | | | | 1 | | | | | |
| TC | D | TISN | T | C | 1 | T | TAST | T | T | | 1 | | | | |
| | N | TSTA | | | | | T | TASH | | | | 1 | | | |
| | V | TSSL | | | | | T | TSSV | | | | | 1 | | |
| | V | TSSI | | | | | T | TSSA | | | | | | 1 | |
| | V | TSNS | | | | | S | HHTS | | | | | | | 1 |
| * R | GSND | | | S | HAQT | | | 1 | | | | | | | |
| A | TTSS | | | S | HATT | | | | 4 | | | | | | |
| T | TAGS | | | CT | K | DHSS | C | T | | 5 | | | | | |
| S | TTSS | | | | T | HPST | | | 1 | | | | | | |
| S | TSSA | | | | S | DSSR | | | | | 1 | | | | |
| S | LSTT | | | | S | DSSR | | | | | | 1 | | | |
| G | LSST | | | | S | DSSR | | | | | | | 1 | | |

RELATIVE SIGNATURE STRENGTH ■ ≤1.00 ■ 0.80 ■ 0.60 ■ 0.40 ■ 0.20 □ 0.00

FIG. 3
SUBSTITUTE SHEET (RULE 26)

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| | |
|-----------------------------|----------------|
| APPROVED BY DRAFTSMAN | O.G. FIG. |
| | CLASS SUBCLASS |

a

AMINO ACID SELECTED AT POSITION -1

| BASE PRESENT AT POSITION ⁴ X IN BINDING SIGNATURES | A | C | D | E | F | G | H | I | K | L | M | N | P | Q | R | S | T | V | W | Y |
|---------------------------------------------------------------------|---|---|----|---|---|---|---|---|---|---|---|---|---|----|----|---|----|---|---|---|
| G | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | 2 | 2 | 0 | 0 | 0 |
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 1 | 1 | 1 | 0 | 0 | 0 |
| T | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 4 | 0 | 1 | 0 | 2 | 5 | 3 | 21 | 1 | 0 | 0 |
| C | 0 | 0 | 10 | 0 | 0 | 0 | 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |

↓ ↓ ↓ ↓ ↓

C T/C T A G(T) T

RECOGNITION PATTERNS

b

AMINO ACID SELECTED AT POSITION 6

| BASE PRESENT AT POSITION ⁵ X IN BINDING SIGNATURES | A | C | D | E | F | G | H | I | K | L | M | N | P | Q | R | S | T | V | W | Y |
|---------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|----|---|---|---|
| G | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 |
| A | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 2 |
| T | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 17 | 3 | 0 | 0 |
| C | 5 | 0 | 1 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 12 | 14 | 6 | 0 | 0 |

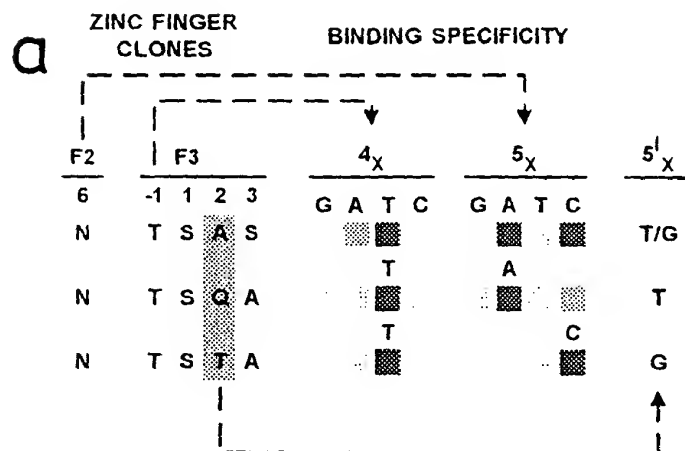
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C A/C G/T A/C G T/C C(A/T)

RECOGNITION PATTERNS

FIG. 4

| | |
|-------------|-----------|
| O.G. FIG. | CLASS |
| | SUBCLASS |
| APPROVED BY | DRAFTSMAN |



b

| AMINO ACID SELECTED AT POSITION 2 | ZINC FINGER CLONES | | | | | CROSS-STRAND BINDING SPECIFICITY | No. OF CLONES SELECTED AND SCREENED |
|-----------------------------------------|-----------------------|----|---|---|---|----------------------------------------|-------------------------------------------|
| | F2 | F3 | | | | 5 ¹ _X | |
| | 6 | -1 | 1 | 2 | 3 | G A T C | |
| E | R | R | L | E | Y | | 4 |
| | R | R | S | E | D | | 4 |
| N | V | T | S | N | S | | 3 |
| | R | G | S | N | D | | 1 |
| Q | Y | R | S | Q | D | | 3 |
| | N | T | S | Q | A | | 4 |
| | K | L | A | Q | T | | 1 |
| | T | R | A | Q | N | | 1 |
| | E | H | R | Q | N | | 1 |
| | S | H | A | Q | T | | 1 |
| R | L | D | S | R | A | | 2 |
| | E | R | S | R | D | | 3 |
| | E | R | L | R | D | | 4 |
| | V | T | S | R | D | | 4 |
| H | A | R | N | H | D | | 2 |
| | S | S | R | H | S | | 1 |
| | T | D | P | H | N | | 1 |
| K | E | H | S | K | S | | 4 |

FIG. 5

| | |
|-------------|----------|
| O.G. FIG. | |
| APPROVED BY | CLASS |
| DRAFTSMAN | SUBCLASS |

FIG. 6A

| | | | | | | | | | | |
|-----------|--------|-----|-----|-----|-----|-----|-----|-----|-----|----|
| | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| Wild-type | 5' GTG | GTG | GGC | GGC | GGC | GGT | GTG | GGC | AAG | 3' |
| | 3' CAC | CAC | CCG | CCG | CCG | CCA | CAC | CCG | TTG | 5' |
| | | | | | | | | | | |
| EJ mutant | 5' GTG | GTG | GGC | GGC | GTC | GGT | GTG | GGC | AAG | 3' |
| | 3' CAC | CAC | CCG | CCG | CAG | CCA | CAC | CCG | TTG | 5' |



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F1 | M | A | E | E | K | P | F | O | C | R | I | C | M | R | N | F | S | D | R | S | S | S | S | L | T | R | R | T | T | R | R | T | T | H | T | G | E | E | K | P |
| F2 | | | | | | | F | O | C | R | I | C | M | R | N | F | S | D | R | S | S | S | S | L | T | R | R | T | T | R | R | T | T | H | T | G | E | E | K | P |
| F3 | | | | | | | F | O | C | R | I | C | M | R | N | F | S | D | R | S | S | S | S | L | T | R | R | T | T | R | R | T | T | H | T | G | E | E | K | P |

FIG. 6C

α - helix

β

β

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| | |
|-----------|----------------|
| APPROVED | O.C. FIG. |
| BY | CLASS/SUBCLASS |
| DRAFTSMAN | |

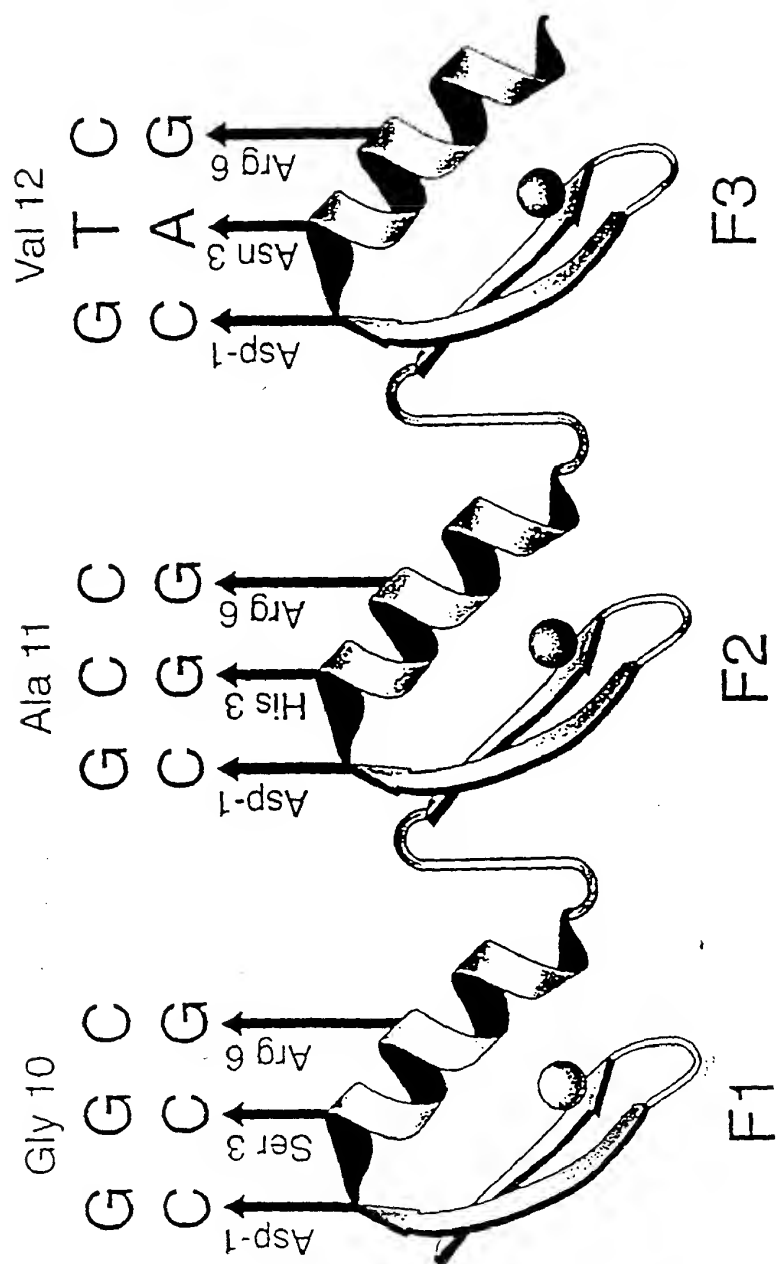
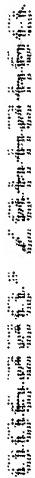


FIG. 6B



A 3D bar chart comparing the difference in absorbance, $A_{650} - A_{450}$, for two samples: W.T. (Wetland Turbidity) and G12V (G12V). The vertical axis represents $A_{650} - A_{450}$ and ranges from 0.0 to 1.0 in increments of 0.2. The horizontal axis has two categories: W.T. and G12V. The bar for W.T. is very short, with a value of 0.02 labeled on its top surface. The bar for G12V is much taller, with a value of 0.76 labeled on its top surface.

| Sample | $A_{650} - A_{450}$ |
|--------|---------------------|
| W.T. | 0.02 |
| G12V | 0.76 |

FIG. 8